

OCT 26 2004

PATENT & TRADEMARK OFFICE

C18:1 Frequencies
for 92EF (WSGA 1AX Q0508)

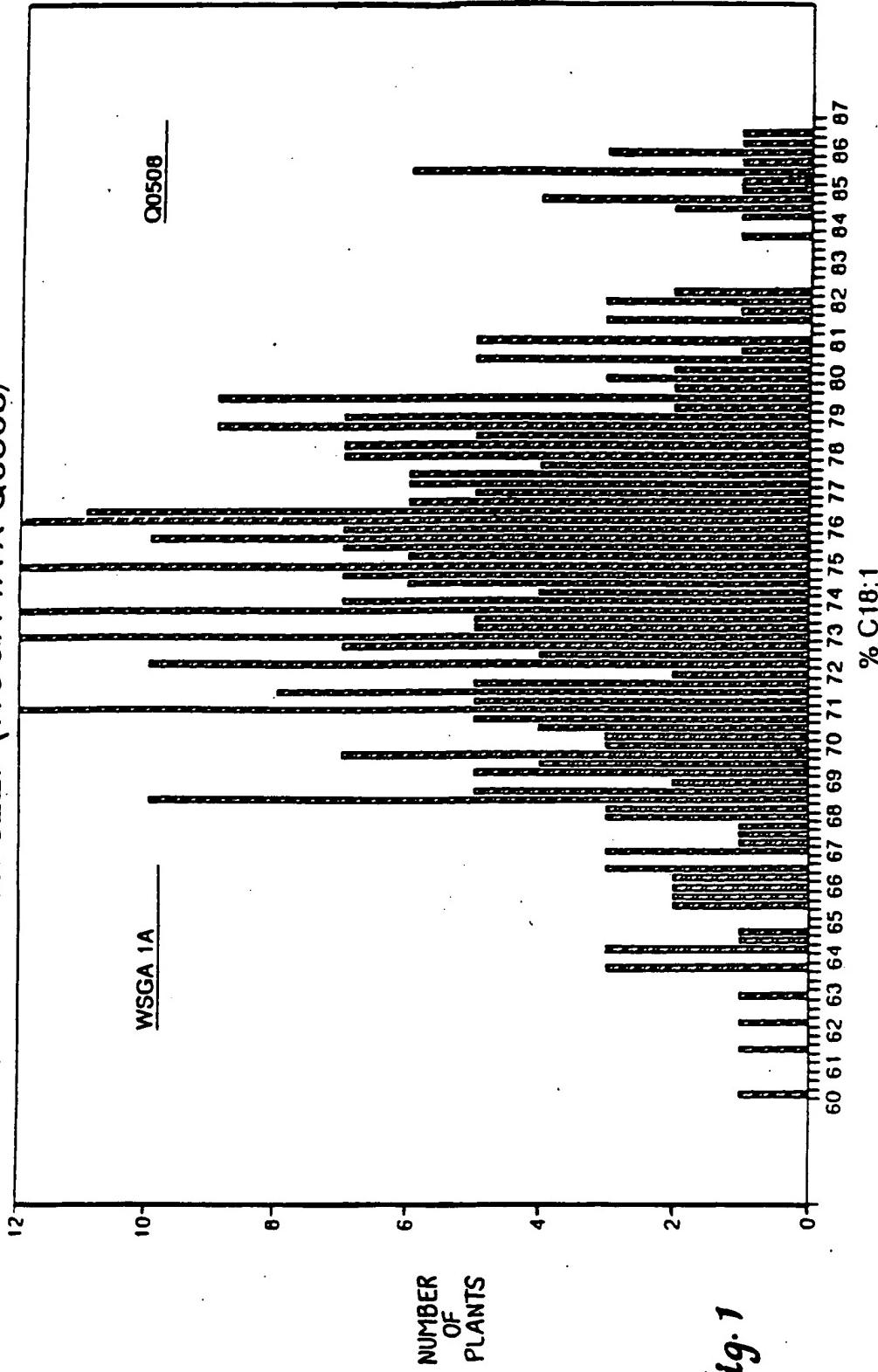


Fig. 1

1	ATGGGTGCCAGGTGGAAAGAATGCCAAGTGTCTCCCTCCC	40	Fad2-D wt
1	ATGGGTGCCAGGTGGAAAGAATGCCAAGTGTCTCCCTCCC	40	Fad2-D (GA316) IMC 129
1	ATGGGTGCCAGGTGGAAAGAATGCCAAGTGTCTCCCTCCC	40	Fad2-F wt
1	ATGGGTGCCAGGTGGAAAGAATGCCAAGTGTCTCCCTCCC	40	Fad2-F (TA515) Q508
1	ATGGGTGCCAGGTGGAAAGAATGCCAAGTGTCTCCCTCCC	40	Fad2-F (GA908) Q4275
41	AAGACTTGAAACCGAACATCAAGGGGGTACCCCTGCCA	50	Fad2-D wt
41	AAGACTTGAAACCGAACATCAAGGGGGTACCCCTGCCA	50	Fad2-D (GA316) IMC 129
41	AAGACTTGAAACCGAACATCAAGGGGGTACCCCTGCCA	50	Fad2-F wt
41	AAGACTTGAAACCGAACATCAAGGGGGTACCCCTGCCA	50	Fad2-F (TA515) Q508
41	AAGACTTGAAACCGAACATCAAGGGGGTACCCCTGCCA	50	Fad2-F (GA908) Q4275
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	60	Fad2-D wt
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	60	Fad2-D (GA316) IMC 129
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	60	Fad2-F wt
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	60	Fad2-F (TA515) Q508
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	60	Fad2-F (GA908) Q4275
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	60	Fad2-F (GA908) Q4275
90	90	70	80
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	90	Fad2-D wt
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	90	Fad2-D (GA316) IMC 129
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	90	Fad2-F wt
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	90	Fad2-F (TA515) Q508
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	90	Fad2-F (GA908) Q4275
100	100	110	120
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	100	Fad2-D wt
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	100	Fad2-D (GA316) IMC 129
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	100	Fad2-F wt
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	100	Fad2-F (TA515) Q508
81	GACACCCGCCCTTCACCTGTCGGAGAACCTCAAGAACATC	100	Fad2-F (GA908) Q4275
110	110	120	130
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	110	Fad2-D wt
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	110	Fad2-D (GA316) IMC 129
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	110	Fad2-F wt
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	110	Fad2-F (TA515) Q508
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	110	Fad2-F (GA908) Q4275
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	110	Fad2-F (GA908) Q4275
130	130	140	150
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	130	Fad2-D wt
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	130	Fad2-D (GA316) IMC 129
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	130	Fad2-F wt
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	130	Fad2-F (TA515) Q508
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	130	Fad2-F (GA908) Q4275
140	140	150	160
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	140	Fad2-D wt
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	140	Fad2-D (GA316) IMC 129
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	140	Fad2-F wt
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	140	Fad2-F (TA515) Q508
121	CCACCGCACTGTTCAAACGGCTCGATCCCTGGCTTCTT	140	Fad2-F (GA908) Q4275

Fig. 2A

Applicant(s): Dharma R. Kodali et al.

**PLANTS, SEEDS AND OILS HAVING AN ELEVATED TOTAL
MONOUNSATURATED FATTY ACID CONTENT**

Fig. 2B

Fig. 2C

<p>481 A A G A G T C A G A C A T C A A G T C A A G T G G G T A C G G C A A G T A C C T C A A C A Fad2-D wt</p> <p>481 A A G A G T C A G A C A T C A A G T C A A G T G G G T A C G G C A A G T A C C T C A A C A Fad2-D (GA316) IMC 129</p> <p>481 A A G A G T C A G A C A T C A A G T C A A G T G G G T A C G G C A A G T A C C T C A A C A Fad2-F wt</p> <p>481 A A G A G T C A G A C A T C A A G T C A A G T G G G T A C G G C A A G T A C C T C A A C A Fad2-F (TA515) Q508</p> <p>481 A A G A G T C A G A C A T C A A G T C A A G T G G G T A C G G C A A G T A C C T C A A C A Fad2-F (GA908) Q4275</p>	<p>520</p> <p>510</p> <p>500</p> <p>490</p>	<p>520</p> <p>510</p> <p>500</p> <p>490</p>
<p>521 A C C C T T T G G G A C C G C A C C G G T G A T G T T A A C G G G T T C A G T T C A C Fad2-D wt</p> <p>521 A C C C T T T G G G A C C G C A C C G G T G A T G T T A A C G G G T T C A G T T C A C Fad2-D (GA316) IMC 129</p> <p>521 A C C C T T T G G G A C C G C A C C G G T G A T G T T A A C G G G T T C A G T T C A C Fad2-F wt</p> <p>521 A C C C T T T G G G A C C G C A C C G G T G A T G T T A A C G G G T T C A G T T C A C Fad2-F (TA515) Q508</p> <p>521 A C C C T T T G G G A C C G C A C C G G T G A T G T T A A C G G G T T C A G T T C A C Fad2-F (GA908) Q4275</p>	<p>560</p> <p>550</p> <p>540</p> <p>530</p>	<p>560</p> <p>550</p> <p>540</p> <p>530</p>
<p>561 T C T C G G C T G G C C T T G G C C T T G T A C T T A G C C T T C A A C G T C T C G G G Fad2-D wt</p> <p>561 T C T C G G C T G G C C T T G G C C T T G T A C T T A G C C T T C A A C G T C T C G G G Fad2-D (GA316) IMC 129</p> <p>561 T C T C G G C T G G C C T T G G C C T T G T A C T T A G C C T T C A A C G T C T C G G G Fad2-F wt</p> <p>561 T C T C G G C T G G C C T T G G C C T T G T A C T T A G C C T T C A A C G T C T C G G G Fad2-F (TA515) Q508</p> <p>561 T C T C G G C T G G C C T T G G C C T T G T A C T T A G C C T T C A A C G T C T C G G G Fad2-F (GA908) Q4275</p>	<p>600</p> <p>590</p> <p>580</p> <p>570</p>	<p>600</p> <p>590</p> <p>580</p> <p>570</p>
<p>601 A G A C C T T A C G A C G G G G C T T C G C T T G C A C C C C A Fad2-D wt</p> <p>601 A G A C C T T A C G A C G G G G C T T C G C T T G C A C C C C A Fad2-D (GA316) IMC 129</p> <p>601 A G A C C T T A C G A C G G G G C T T C G C T T G C A C C C C A Fad2-F wt</p> <p>601 A G A C C T T A C G A C G G G G C T T C G C T T G C A C C C C A Fad2-F (TA515) Q508</p> <p>601 A G A C C T T A C G A C G G G G C T T C G C T T G C A C C C C A Fad2-F (GA908) Q4275</p>	<p>640</p> <p>630</p> <p>620</p> <p>610</p>	<p>640</p> <p>630</p> <p>620</p> <p>610</p>

Fig. 2D

641	A C G C T C C C A T C T A C A A C G A C C G T G A G C G G T C T C C A G A T A T A Fad2-D wt	650		660		670		680
641	A C G C T C C C A T C T A C A A C G A C C G T G A G C G G T C T C C A G A T A T A Fad2-D (GA316) IMC 129							
641	A C G C T C C C A T C T A C A A C G A C C G T G A G C G G T C T C C A G A T A T A Fad2-F wt							
641	A C G C T C C C A T C T A C A A C G A C C G T G A G C G G T C T C C A G A T A T A Fad2-F (TA515) Q508							
641	A C G C T C C C A T C T A C A A C G A C C G T G A G C G G T C T C C A G A T A T A Fad2-F (GA908) Q4275							
681	C A T C T C G G A C G C T G G C A T C C T C G C C G T C T G C T A C G G G T C T C Fad2-D wt.	690		700		710		720
681	C A T C T C G G A C G C T G G C A T C C T C G C C G T C T G C T A C G G G T C T C Fad2-D (GA316) IMC 129							
681	C A T C T C G G A C G C T G G C A T C C T C G C C G T C T G C T A C G G G T C T C Fad2-F wt							
681	C A T C T C G G A C G C T G G C A T C C T C G C C G T C T G C T A C G G G T C T C Fad2-F (TA515) Q508							
681	C A T C T C G G A C G C T G G C A T C C T C G C C G T C T G C T A C G G G T C T C Fad2-F (GA908) Q4275							
721	T A C C G G C T A C G G C T G G C T G T C C A A G G A G T T G C C T C G A T G G T C T Fad2-D wt	730		740		750		760
721	T A C C G G C T A C G G C T G G C T G T C C A A G G A G T T G C C T C G A T G G T C T Fad2-D (GA316) IMC 129							
721	T T C C G G T A C G G C C G G C A G G G A G T G G C C T C G A T G G T C T Fad2-F wt							
721	T T C C G G T A C G G C C G G C A G G G A G T G G C C T C G A T G G T C T Fad2-F (TA515) Q508							
721	T T C C G G T A C G G C C G G C A G G G A G T G G C C T C G A T G G T C T Fad2-F (GA908) Q4275							
761	G C T T C T A C G G A G T T C C T C T G A T T G T C A A C G G G T T C T T Fad2-D wt.	770		780		790		800
761	G C T T C T A C G G A G T T C C T C T G A T T G T C A A C G G G T T C T T Fad2-D (GA316) IMC 129							
761	G C T T C T A C G G A G T T C C G C T C T G A T T G T C A A T G G T T C C T Fad2-F wt							
761	G C T T C T A C G G A G T T C C G C T C T G A T T G T C A A T G G T T C C T Fad2-F (TA515) Q508							
761	G C T T C T A C G G A G T T C C G C T C T G A T T G T C A A T G G T T C C T Fad2-F (GA908) Q4275							

Fig. 2E

801	A G T T T G A T C A C T T A C T T G C A G C A C A C G C A T C C T T C C C T G	Fad2-D wt
801	A G T T T G A T C A C T T A C T T G C A G C A C A C G C A T C C T T C C C T G	Fad2-D (GA316) IMC 129
801	C G T G T G A T C A C T T A C T T G C A G C A C A C G C A T C C T T C C C T G	Fad2-F wt
801	C G T G T G A T C A C T T A C T T G C A G C A C A C G C A T C C T T C C C T G	Fad2-F (TA515) Q508
801	C G T G T G A T C A C T T A C T T G C A G C A C A C G C A T C C T T C C C T G	Fad2-F (GA908) Q4275
810	820	830
		840
841	C C T C A C T T G A C T C G G T C T G A G T G G G A T T G G T T G A G G G G A G	Fad2-D wt
841	C C T C A C T T G A C T C G T C T G A G T G G G A T T G G T T G A G G G G A G	Fad2-D (GA316) IMC 129
841	C C T C A C T A C G A T T C G T C C G A G T G G G A T T G G T T G A G G G G A G	Fad2-F wt
841	C C T C A C T A C G A T T C G T C C G A G T G G G A T T G G T T G A G G G G A G	Fad2-F (TA515) Q508
841	C C T C A C T A C G A T T C G T C C G A G T G G G A T T G G T T G A G G G G A G	Fad2-F (GA908) Q4275
850	860	870
		880
890	900	910
		920
881	C T T T G G C C A C C C G T T G A C A G A G A C T A C G G A A T C T T G A A C A A	Fad2-D wt
881	C T T T G G C C A C C C G T T G A C A G A G A C T A C G G A A T C T T G A A C A A	Fad2-D (GA316) IMC 129
881	C T T T G G C T A C C C G T T G A C A G A G A C T A C G G A A T C T T G A A C A A	Fad2-F wt
881	C T T T G G C T A C C C G T T G A C A G A G A C T A C G G A A T C T T G A A C A A	Fad2-F (TA515) Q508
881	C T T T G G C T A C C C G T T G A C A G A G A C T A C G G A A A T C T T G A A C C A A	Fad2-F (GA908) Q4275
930	940	950
		960
921	G G T C T T C C A C A A T A T C A C G G A C A C G G A C A C G G G C A T C A C	Fad2-D wt
921	G G T C T T C C A C A A T A T C A C G G A C A C G G A C A C G G G C A T C A C	Fad2-D (GA316) IMC 129
921	G G T C T T C C A C A A T A T T A C C G A C A C G G A C A C G G G C A T C A T	Fad2-F wt
921	G G T C T T C C A C A A T A T T A C C G A C A C G G G C A T C A T Fad2-F (TA515) Q508	Fad2-F (GA908) Q4275

Fig. 2J

Fig. 29

	1090	1100	1110	1120
1081	A G G A G T G T A T C T A T G T G G A A C C G G A C A G G C A A G G T G A G A			Fad2-D wt
1081	A A G G A G T G T A T C T A T G T G G A A C C G G A C A G G C A A G G T G A G A			Fad2-D (GA316) IMC 129
1081	A A G G A G T G T A T C T A T G T G G A A C C G G A C A G G C A A G G T G A G A			Fad2-F wt
1081	A A G G A G T G T A T C T A T G T G G A A C C G G A C A G G C A A G G T G A G A			Fad2-F (GA316) IMC 129
1081	A A G G A G T G T A T C T A T G T G G A A C C G G A C A G G C A A G G T G A G A			Fad2-F wt
1081	A A G G A G T G T A T C T A T G T G G A A C C G G A C A G G C A A G G T G A G A			Fad2-F (TA515) Q508
1081	A A G G A G T G T A T C T A T G T G G A A C C G G A C A G G C A A G G T G A G A			Fad2-F (GA908) Q4275
	1130	1140	1150	
1121	A G A A A G G T G T G T C T G G T A C A A C C A A T A A G T T A T G A			Fad2-D wt
1121	A G A A A G G T G T G T C T G G T A C A A C C A A T A A G T T A T G A			Fad2-D (GA316) IMC 129
1121	A G A A A G G T G T G T C T G G T A C A A C C A A T A A G T T A T G A			Fad2-F wt
1121	A G A A A G G T G T G T C T G G T A C A A C C A A T A A G T T A T G A			Fad2-F (GA316) IMC 129
1121	A G A A A G G T G T G T C T G G T A C A A C C A A T A A G T T A T G A			Fad2-F wt
1121	A G A A A G G T G T G T C T G G T A C A A C C A A T A A G T T A T G A			Fad2-F (TA515) Q508
1121	A G A A A G G T G T G T C T G G T A C A A C C A A T A A G T T A T G A			Fad2-F (GA908) Q4275

Fig. 2H

Fig. 304

81	Ieu Ser Tyr phe Ala Trp Pro Ieu Tyr Trp Ala Cys Gln Gly Cys Val Ieu Thr Gly Val Fadd2-D wt
81	Ieu Ser Tyr phe Ala Trp Pro Ieu Tyr Trp Ala Cys Gln Gly Cys Val Ieu Thr Gly Val Fadd2-D (GA316) IMC129
81	Ieu Ser Tyr phe Ala Trp Pro Ieu Tyr Trp Ala Cys Gln Gly Cys Val Ieu Thr Gly Val Fadd2-F wt
81	Ieu Ser Tyr phe Ala Trp Pro Ieu Tyr Trp Ala Cys Gln Gly Cys Val Ieu Thr Gly Val Fadd2-F (TAS15) Q508
81	Ieu Ser Tyr phe Ala Trp Pro Ieu Tyr Trp Ala Cys Gln Gly Cys Val Ieu Thr Gly Val Fadd2-F (GA908) Q4275
100	
101	Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Asp Tyr Gln Trp Leu Asp Asp Fadd2-D wt
101	Trp Val Ile Ala His Lys Cys Gly His His Ala Phe Ser Asp Tyr Gln Trp Leu Asp Asp Fadd2-D (GA316) IMC129
101	Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Asp Tyr Gln Trp Leu Asp Asp Fadd2-F wt
101	Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Asp Tyr Gln Trp Leu Asp Asp Fadd2-F (TAS15) Q508
101	Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Asp Tyr Gln Trp Leu Asp Asp Fadd2-F (GA908) Q4275
110	
120	
121	Thr Val Gly Ieu Ile Phe His Ser Phe Ieu Val Pro Tyr Phe Ser Trp Lys Tyr Ser Fadd2-D wt
121	Thr Val Gly Ieu Ile Phe His Ser Phe Ieu Val Pro Tyr Phe Ser Trp Lys Tyr Ser Fadd2-D (GA316) IMC129
121	Thr Val Gly Ieu Ile Phe His Ser Phe Ieu Val Pro Tyr Phe Ser Trp Lys Tyr Ser Fadd2-F wt
121	Thr Val Gly Ieu Ile Phe His Ser Phe Ieu Val Pro Tyr Phe Ser Trp Lys Tyr Ser Fadd2-F (TAS15) Q508
121	Thr Val Gly Ieu Ile Phe His Ser Phe Ieu Val Pro Tyr Phe Ser Trp Lys Tyr Ser Fadd2-F (GA908) Q4275
130	
140	
141	His Arg Arg His His Ser Asn Thr Gly Ser Ieu Glu Arg Asp Glu Val Phe Val Pro Lys Fadd2-D wt
141	His Arg Arg His His Ser Asn Thr Gly Ser Ieu Glu Arg Asp Glu Val Phe Val Pro Lys Fadd2-D (GA316) IMC129
141	His Arg Arg His His Ser Asn Thr Gly Ser Ieu Glu Arg Asp Glu Val Phe Val Pro Lys Fadd2-F wt
141	His Arg Arg His His Ser Asn Thr Gly Ser Ieu Glu Arg Asp Glu Val Phe Val Pro Lys Fadd2-F (TAS15) Q508
141	His Arg Arg His His Ser Asn Thr Gly Ser Ieu Glu Arg Asp Glu Val Phe Val Pro Lys Fadd2-F (GA908) Q4275
150	
160	

Fig. 3B

161	Lys	Lys	Ser	Asp	Ile	Lys	Trp	Tyr	Gly	Lys	Tyr	Ile	Asn	Asn	Pro	Leu	Gly	Arg	Thr	Val	Fad2-D wt
161	Lys	Lys	Ser	Asp	Ile	Lys	Trp	Tyr	Gly	Lys	Tyr	Ile	Asn	Asn	Pro	Leu	Gly	Arg	Thr	Val	Fad2-D (GA316) IMC129
161	Lys	Lys	Ser	Asp	Ile	Lys	Trp	Tyr	Gly	Lys	Tyr	Ile	Asn	Asn	Pro	Leu	Gly	Arg	Thr	Val	Fad2-F wt
161	Lys	Lys	Ser	Asp	Ile	Lys	Trp	Tyr	Gly	Lys	Tyr	Ile	Asn	Asn	Pro	Leu	Gly	Arg	Thr	Val	Fad2-F (GA316) IMC129
161	Lys	Lys	Ser	Asp	Ile	Lys	Trp	Tyr	Gly	Lys	Tyr	Ile	Asn	Asn	Pro	Leu	Gly	Arg	Thr	Val	Fad2-F (TAS15) Q508
161	Lys	Lys	Ser	Asp	Ile	Lys	Trp	Tyr	Gly	Lys	Tyr	Ile	Asn	Asn	Pro	Leu	Gly	Arg	Thr	Val	Fad2-F (GA908) Q4275
<hr/>																					
181	Met	Leu	Thr	Val	Gln	Phe	Thr	Leu	Gly	Trp	Pro	Leu	Tyr	Ile	Ala	Phe	Asn	Val	Ser	Gly	Fad2-D wt
181	Met	Ileu	Thr	Val	Gln	Phe	Thr	Leu	Gly	Trp	Pro	Ileu	Tyr	Ileu	Ala	Phe	Asn	Val	Ser	Gly	Fad2-D (GA316) IMC129
181	Met	Ileu	Thr	Val	Gln	Phe	Thr	Leu	Gly	Trp	Pro	Ileu	Tyr	Ileu	Ala	Phe	Asn	Val	Ser	Gly	Fad2-F wt
181	Met	Ileu	Thr	Val	Gln	Phe	Thr	Leu	Gly	Trp	Pro	Ileu	Tyr	Ileu	Ala	Phe	Asn	Val	Ser	Gly	Fad2-F (TAS15) Q508
181	Met	Ileu	Thr	Val	Gln	Phe	Thr	Leu	Gly	Trp	Pro	Ileu	Tyr	Ileu	Ala	Phe	Asn	Val	Ser	Gly	Fad2-F (GA908) Q4275
<hr/>																					
190																					200
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-D wt	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-D (GA316) IMC129	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-F wt	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-F (TAS15) Q508	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-F (GA908) Q4275	
<hr/>																					
210																					220
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-D wt	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-D (GA316) IMC129	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-F wt	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-F (TAS15) Q508	
201	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala	Cys	Ile	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Fad2-F (GA908) Q4275	
<hr/>																					
230																					240
221	Arg	Glu	Arg	Ileu	Gln	Ile	Tyr	Ile	Ser	Asp	Ala	Gly	Ile	Ileu	Ala	Val	Cys	Tyr	Gly	Leu	Fad2-D wt
221	Arg	Glu	Arg	Ileu	Gln	Ile	Tyr	Ile	Ser	Asp	Ala	Gly	Ile	Ileu	Ala	Val	Cys	Tyr	Gly	Leu	Fad2-D (GA316) IMC129
221	Arg	Glu	Arg	Ileu	Gln	Ile	Tyr	Ile	Ser	Asp	Ala	Gly	Ile	Ileu	Ala	Val	Cys	Tyr	Gly	Leu	Fad2-F wt
221	Arg	Glu	Arg	Ileu	Gln	Ile	Tyr	Ile	Ser	Asp	Ala	Gly	Ile	Ileu	Ala	Val	Cys	Tyr	Gly	Leu	Fad2-F (TAS15) Q508
221	Arg	Glu	Arg	Ileu	Gln	Ile	Tyr	Ile	Ser	Asp	Ala	Gly	Ile	Ileu	Ala	Val	Cys	Tyr	Gly	Leu	Fad2-F (GA908) Q4275

Fig. 3C

241	Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr Gly Val Pro Leu	Fad2-D wt
241	Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr Gly Val Pro Leu	Fad2-D (GA316) IMC129
241	Phe Arg Tyr Ala Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr Gly Val Pro Leu	Fad2-F wt
241	Phe Arg Tyr Ala Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr Gly Val Pro Leu	Fad2-F (TA515) Q508
241	Phe Arg Tyr Ala Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr Gly Val Pro Leu	Fad2-F (GA908) Q4275
250	<hr/>	
260	<hr/>	
261	Leu Ile Val Asn Gly Phe Ile Val Leu Ile Thr Tyr Leu Gln His Thr His Pro Ser Leu	Fad2-D wt
261	Leu Ile Val Asn Gly Phe Ile Val Leu Ile Thr Tyr Leu Gln His Thr His Pro Ser Leu	Fad2-D (GA316) IMC129
261	Leu Ile Val Asn Gly Phe Ile Val Leu Ile Thr Tyr Leu Gln His Thr His Pro Ser Leu	Fad2-F wt
261	Leu Ile Val Asn Gly Phe Ile Val Leu Ile Thr Tyr Leu Gln His Thr His Pro Ser Leu	Fad2-F (TA515) Q508
261	Leu Ile Val Asn Gly Phe Ile Val Leu Ile Thr Tyr Leu Gln His Thr His Pro Ser Leu	Fad2-F (GA908) Q4275
270	<hr/>	
280	<hr/>	
281	Pro His Tyr Asp Ser Ser Glu Trp Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg	Fad2-D wt
281	Pro His Tyr Asp Ser Ser Glu Trp Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg	Fad2-D (GA316) IMC129
281	Pro His Tyr Asp Ser Ser Glu Trp Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg	Fad2-F wt
281	Pro His Tyr Asp Ser Ser Glu Trp Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg	Fad2-F (TA515) Q508
281	Pro His Tyr Asp Ser Ser Glu Trp Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg	Fad2-F (GA908) Q4275
290	<hr/>	
300	<hr/>	
301	Asp Tyr Gly Ile Ile Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His	Fad2-D wt
301	Asp Tyr Gly Ile Ile Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His	Fad2-D (GA316) IMC129
301	Asp Tyr Gly Ile Ile Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His	Fad2-F wt
301	Asp Tyr Gly Ile Ile Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His	Fad2-F (TA515) Q508
301	Asp Tyr Gly Ile Ile Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His	Fad2-F (GA908) Q4275
310	<hr/>	
320	<hr/>	

Fig. 3D

330							
340							
321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-D wt	321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-D wt	321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-F wt	321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-F (GA316) IMC129
321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-D wt	321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-F wt	321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-F (TA515) Q508	321	Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala Ile Lys Pro Ile Fad2-F (GA908) Q4275
350							
360							
341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-D wt	341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-D wt	341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-F wt	341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-F (GA316) IMC129
341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-D wt	341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-F wt	341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-F (TA515) Q508	341	Leu Glu Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val Lys Ala Met Trp Arg Glu Ala Fad2-F (GA908) Q4275
370							
380							
361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-D wt	361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-D wt	361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-F wt	361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-F (GA316) IMC129
361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-D wt	361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-F wt	361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-F (TA515) Q508	361	Lys Glu Cys Ile Tyr Val Glu Pro Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Fad2-F (GA908) Q4275
381	Asn Asn Lys Leu ter	381	Asn Asn Lys Leu ter	381	Asn Asn Lys Leu ter	381	Asn Asn Lys Leu ter

Fig. 3E

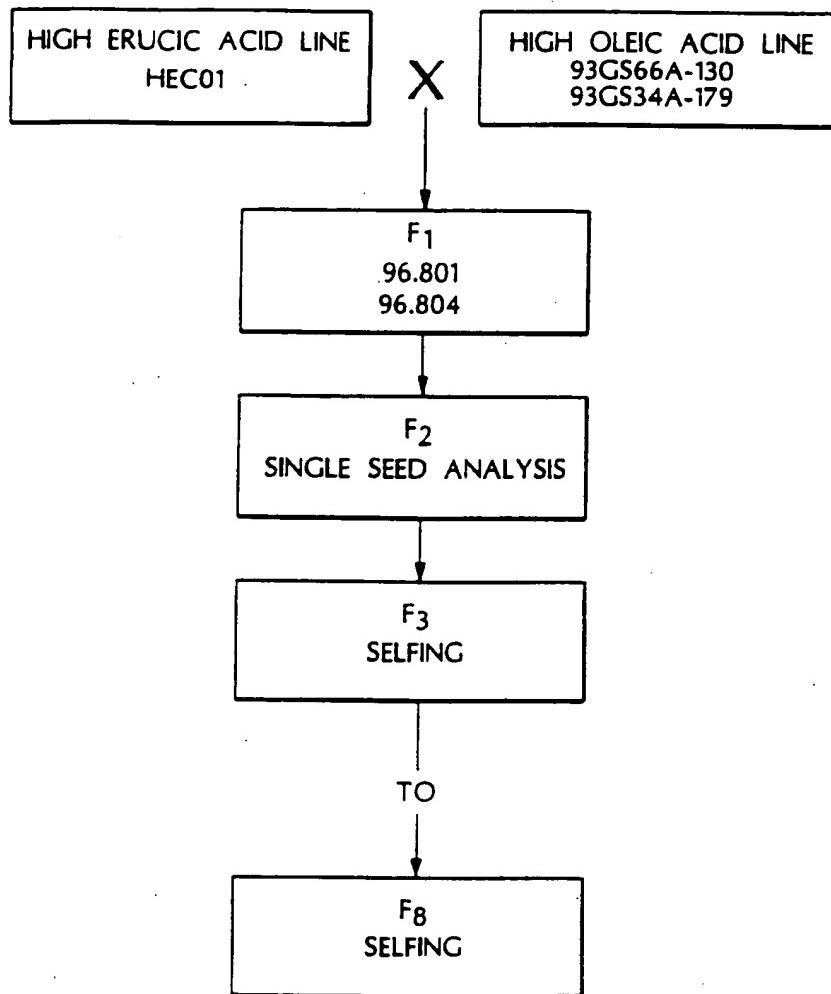


FIG. 4